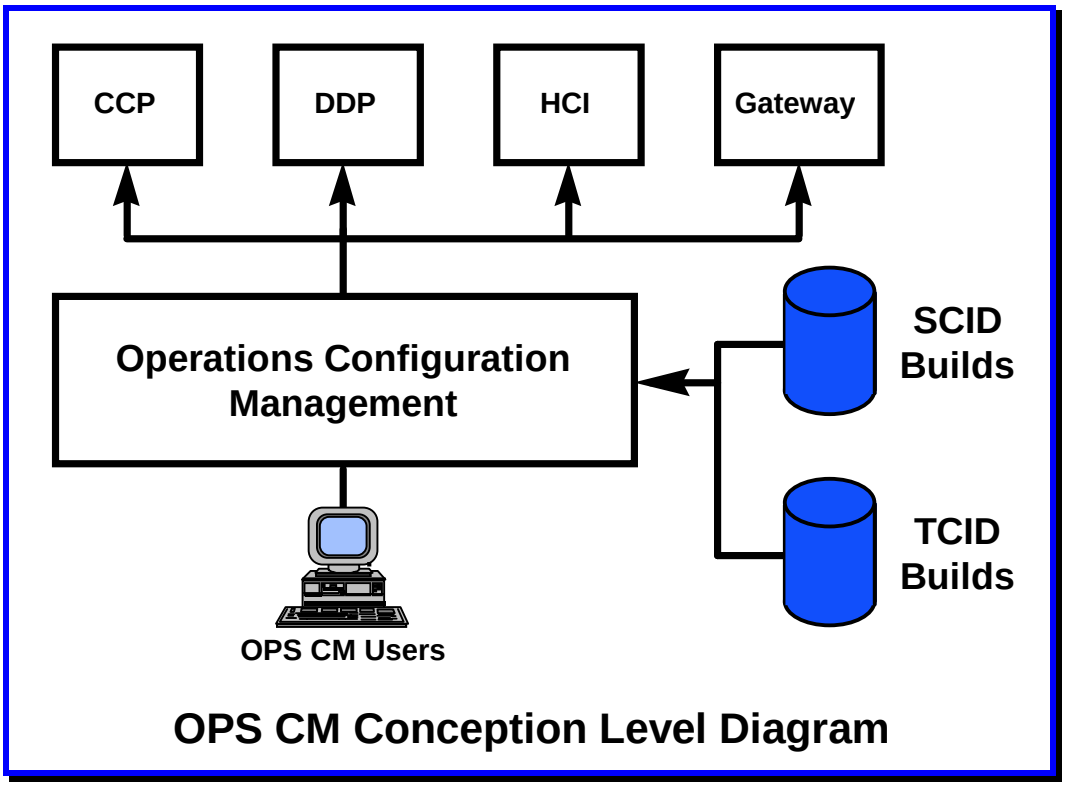
1. Operations Configuration Manager CSC

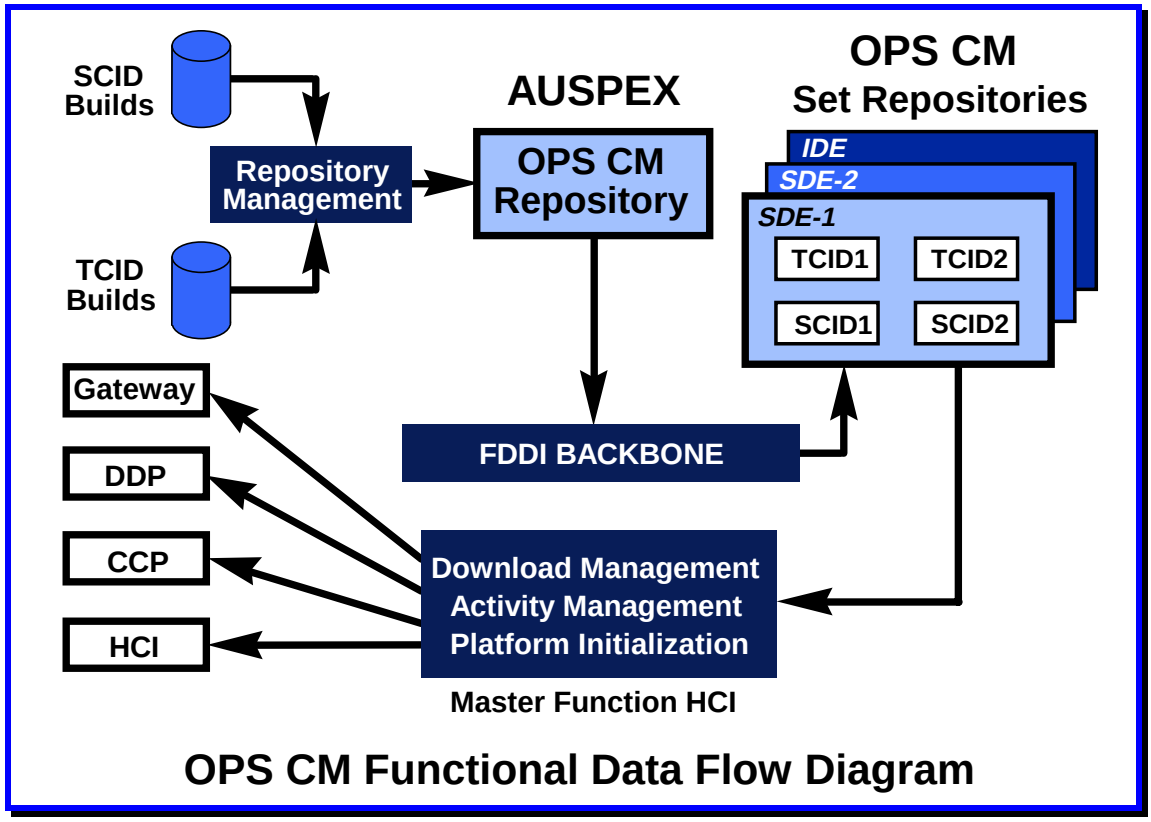
1.1 Operations Configuration Manager (OPS CM) CSC Introduction

1.1.1 OPS CM Overview

The Operations Configuration Manager (OPS CM) CSC provides the capability to configure DDPs, CCPs, Gateways, and HCIs in order to support CLCS operations. This configuration includes downloading SCID and TCID software baselines and initializing this software. OPS CM also supports the creation and management of activities within the CLCS.



OPS CM can be viewed as having the following functional data flow. A Repository Manager checks SCID and TCID Builds into the OPS CM Repository on the Auspex server. These Builds are distributed to the OPS CM Set Repositories in the SDE and IDE environments. A Master Function HCI handles the download and activity management, and platform initialization for the DDPs, CCPs, Gateways and other HCIs. A detailed data flow diagram is shown in section 1.2.5.



1.1.2 OPS CM Operational Description

OPS CM provides a set of integrated tools assisting in the end-to-end movement of system software, test applications and test products. OPS CM provides tools to bring in new baselines and transport them to the various CLCS platforms. Baselines for system software and test software are associated to a set of target platforms using the activity manager function of OPS CM. Once these activities are defined, the OPS CM download function distributes these baselines, as defined by the activity definitions, to the target platforms and initializes the software. OPS CM will maintain a table of platform configuration information (called a platform parameter table - PPT) that can be accessed by test software through a set of APIs. OPS CM software also allows users to monitor the configurations of other platforms in the CLCS. Once the user has logged off, OPS CM processes will do a preliminary clean up of files on the local platform and close out the processes started up by the logged off user.

1.2 OPS CM Specifications

1.2.1 OPS CM Ground Rules

OPS CM will operate under the following ground rules and assumptions:

- The central CM repository will be located on an Auspex platform.
- DDP, CCP and HCI platforms will be SGI computers.
- SCIDs referred to in this document do not include COTS or operating system (OS) software.

  - COTS will be the responsibility of the OS group.
- NFS mounts will be available for use by OPS CM for activity management and software download to the local platforms.
- Similar platform types (i.e. DDP, CCP, HCI) will initially be downloaded with identical software configurations.
- Gateways will be loaded with unique TCID Gateway tables according to their specified function.
- A temporary read-write area will be provided on each platform.
- For Redstone, HCI system services will be initialized at user login.
- For Redstone, it will be procedural to ensure that the correct SCID for a specific TCID has been loaded, and that the correct versions of the operating system and COTS software have been associated with a specific SCID.
- OPS CM has the following dependencies on other CSCIs:
  - GSE Gateway
    - Inputs to the Gateway IDD.
    - Gateway load software for testing.
  - System Build
    - SCID directory structure.
  - Test Build
    - TCID directory structure.
  - System Services
    - Application Messaging API definition.
    - Application Messaging software for testing.
    - Network Registration Service (NRS) API definition.
    - Network Registration Service software for testing.
    - Initialization and Termination Service API definition.
    - Initialization and Termination Service software for testing.
    - Data Logging Services API definition.
    - Data Logging Services software for testing.

1.2.2 OPS CM Functional Requirements

The Functional Requirements area is composed of the following sections:

1. File Repository Management
2. Activity Management
3. Software Download
4. Platform Configuration and Initialization
5. Platform Parameter Table
6. Logging

Note: The term “CLCS Platform” includes HCI, DDP, CCP, and Gateways unless otherwise stated.

1. File Repository Management

1.1 OPS CM will provide the following file repositories:
   a. Verified Application Repository (VAR)
   b. Unverified Application Repository (UAR)
   c. Test Build Products Repository (TBPR)
   d. System Build Repository (SBR)

e. Front End Gateway Repository (FEGR)
f. User Managed Storage (UMS)

1.2 OPS CM will provide the capability to introduce changes within a single subsystem into an OPS CM SCID test repository.

1.3 OPS CM will provide the capability to introduce an SCID baseline into a test repository.

1.4 OPS CM will provide the capability to promote an SCID baseline.

1.5 OPS CM will provide the capability to promote a TCID baseline.

1.6 OPS CM will prevent the user from introducing an SCID baseline into an existing baseline.

1.7 OPS CM will prevent an unauthorized user from promoting an SCID baseline.

1.8 OPS CM will provide the capability to delete an SCID baseline from an OPS CM repository.

2. Activity Management

2.1 OPS CM will provide a method to manage activities in the CLCS.

2.2 OPS CM will provide a graphical HCI interface for Activity Management.

2.3 OPS CM will provide a method for the addition of a new Activity.

2.4 OPS CM will provide a method for the modification of an Activity.

2.5 OPS CM will provide a method for the deletion of an Activity

2.6 OPS CM will provide a method to confirm the deletion of an Activity.

2.7 OPS CM will provide a method to designate an Activity as active.

2.8 OPS CM will provide a method to designate an Activity as inactive.

2.9 OPS CM will only allow the deactivation of an Activity in use upon user override.

2.10 OPS CM will provide a method to specify that an Activity requires verified software only.

2.11 OPS CM will provide a method to associate an Activity Type to an activity.

2.12 OPS CM will provide a method to display the activities that CLCS platforms are supporting.

2.13 OPS CM will provide a method to define SCID and TCID baselines within an activity.

2.14 OPS CM will provide the capability to define CLCS platform groups as download targets.

2.15 OPS CM will provide the capability to save CLCS platform group definitions.

2.16 OPS CM will provide the capability to modify CLCS platform groups as download targets.

2.17 OPS CM will provide the capability to delete CLCS platform groups as download targets.

2.18 OPS CM will provide the capability to define subsets of platforms within a CLCS platform group.

2.19 The available Activity Types will be:
a. Operations (OPS)
b. Simulation (SIM)
c. Development (DEV)

3. Software Download

3.1 OPS CM will provide the capability to load a single CLCS platform with an SCID baseline.

3.2 OPS CM will provide the capability to load a single CLCS platform with a TCID baseline.

3.3 OPS CM will provide the capability to load a single CLCS platform with an SCID baseline and a TCID baseline in a single operation.

3.4 OPS CM will provide the capability for an HCI platform to be loaded with user and positional home directories.

3.5 OPS CM will provide a graphical HCI interface to allow authorized users to request and execute download functions.

3.6 OPS CM will provide the capability to load CLCS platform groups with an SCID baseline in a single operation.

3.7 OPS CM will provide the capability to load CLCS platform groups with a TCID baseline in a single operation.

3.8 OPS CM will provide the capability to load CLCS platform groups with an SCID baseline and a TCID baseline in a single operation.

3.9 OPS CM will check for the existence of a specified SCID on the target platform prior to download.

3.10 OPS CM will check for the existence of a specified TCID on the target platform prior to download.

3.11 OPS CM will not perform the download to the target platform if the specified baseline already exists on the target platform.

3.12 OPS CM will set default ownerships and permissions for files downloaded to CLCS platforms (as supported by the OS platform).

3.13 OPS CM will set special ownerships and permissions for files downloaded to CLCS platforms that are specified in a predefined list (as supported by the OS platform).

3.14 When a baseline is being overwritten, OPS CM will ensure that any existing baseline files on the target platform are removed or completely replaced before the new baseline is loaded.

3.15 OPS CM will provide a method to display the current software baseline loads per platform.

3.16 OPS CM will verify the downloaded software baseline on the CLCS platform.

3.17 OPS CM will allow the user to initiate a software baseline verification.

3.18 OPS CM will ensure that, for Activity Types of “Operations”, the CLCS platform is loaded with verified software only.

4. Platform Configuration and Initialization

The CLCS Platform and Initialization section is composed of the following subsections:

1. Common
2. HCI Platforms
3. DDP and CCP Platforms
4. Gateway Platforms

4.1 Common

a. OPS CM will provide the capability to initialize system software baselines on CLCS platforms.
b. The software initialization of an HCI will be based on login position.
c. The software initialization of a CLCS platform will be based on the allocated activity.
d. OPS CM will provide a graphical HCI interface for authorized users to initialize downloaded CLCS platforms.
e. OPS CM will provide the capability to invoke a system startup script to initiate the SCID processes on the CLCS platform.
f. OPS CM will provide a method to specify other applications to be started after the system startup script has completed (excluding Gateways).
g. Upon platform termination, OPS CM will terminate all SCID processes started at configuration time (excluding Gateways).
h. Upon platform termination, OPS CM will terminate all positional processes (excluding Gateways).
i. Upon platform termination, OPS CM will delete files stored in the platform’s local temporary storage.
j. Platform termination will be performed at user logout, but not shift change, and prior to platform download (excluding Gateways).

4.2 HCI Platforms

a. OPS CM will use standard operating system resource files to assist in the initialization of the HCI platform.

b. OPS CM will provide the user a method to append selected positional modifications to the standard operating system resource files.
c. OPS CM will support the initialization of the DDP/CCP/HCI combined debug configuration.

4.3 **DDP and CCP Platforms**

a. OPS CM will initialize platform applications based on platform type.
b. OPS CM will provide a method to report the current status of each CCP and DDP platform.
c. OPS CM will provide a graphical HCI interface for authorized users to configure and de-configure a given set of CCP and DDP platforms.
d. OPS CM will support the initialization of the DDP/CCP combined debug configuration.

4.4 **Gateway Platforms**

a. OPS CM will report the current mode, and TCID and SCID baselines of the selected Gateway.
b. OPS CM will provide a graphical HCI interface to issue commands to initialize and terminate Gateway processes.
c. OPS CM will provide a graphical HCI interface to request and display Gateway status information.

5. Platform Parameter Table (PPT)

5.1 OPS CM will manage the following minimum data set on the local platform (excluding Gateways):

a. Platform Name: Uniquely identifies a specific instance of the platform entity.
b. User Name: The ASCII identifier of the user currently logged onto the platform.
c. Position Name: The ASCII Position ID of the user currently logged onto the platform.
d. Discipline Name: The ASCII Discipline ID of the user currently logged onto the platform.
e. Activity: The currently configured Activity name.
f. SCID: The current SCID baseline ID loaded on the platform.
g. TCID: The current TCID baseline ID loaded on the platform.
h. Tail ID: The vehicle ID.
i. Flight Number: The shuttle flight number.
j. Responsible System (RSYS): The one or more RSYSs associated with the Group/Position ID of the user currently logged onto the platform.
k. End Item Location: The location of the end item under test (OPF1, VAB1, PAD A, etc.).

5.2 OPS CM will provide an API to allow applications to read the entire Platform Parameter Table.

5.3 OPS CM will provide an API to allow applications to read a single entry in the Platform Parameter Table.

5.4 OPS CM will provide an API to set the user name, positional ID and discipline ID in the Platform Parameter Table.

6. Logging

6.1 OPS CM will log requests for OPS CM functions.

6.2 OPS CM will log the results of user specified requests for its functions.

6.3 OPS CM logging will be in Human understandable ASCII format.

6.4 OPS CM will log the CLCS Platform Parameter Table.

6.5 OPS CM will log error events.

6.6 OPS CM will log Health and Status of OPS CM functions including:

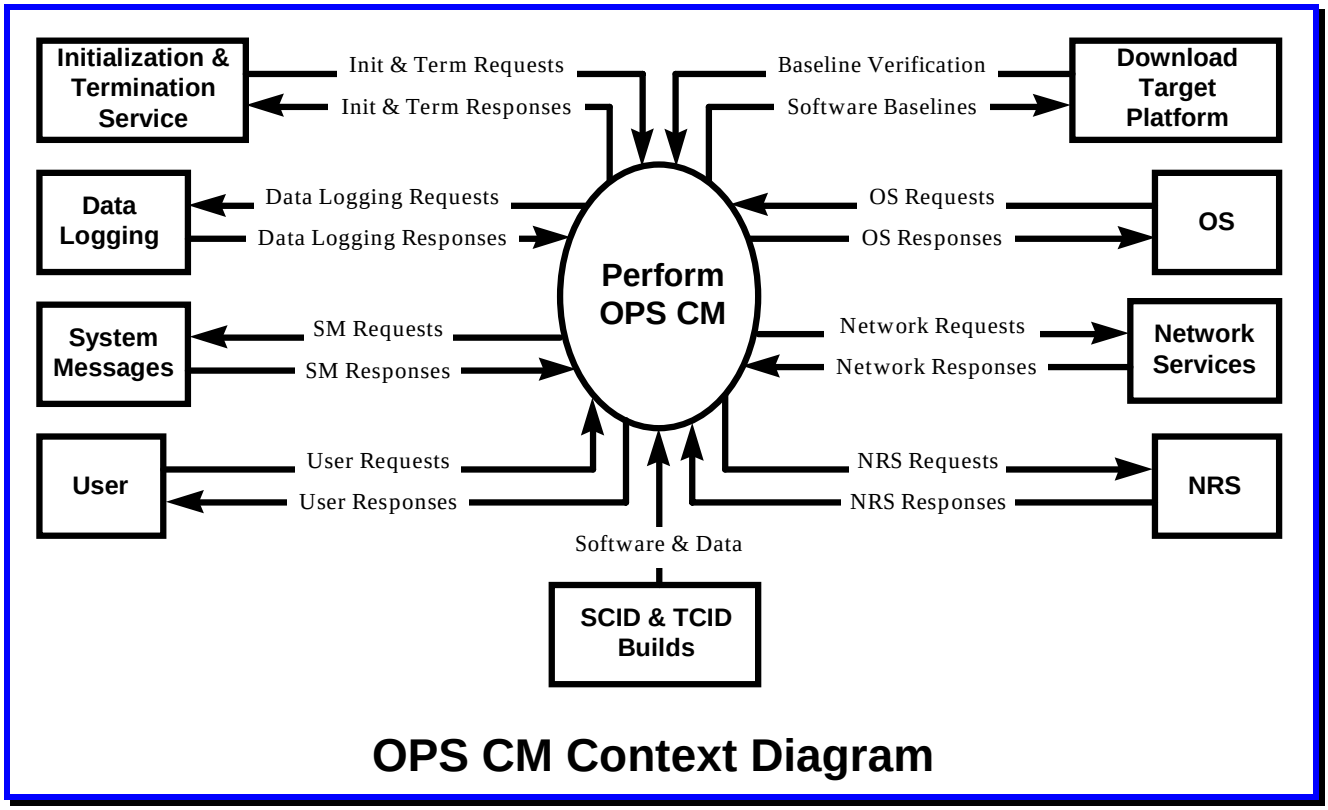
a. Initiation of an OPS CM function.
b. Initiation of selected stages of an OPS CM function.
c. Successful completion of an OPS CM function.
d. Unsuccessful completion of an OPS CM function.

1.2.3 OPS CM Performance Requirements

1. TBD

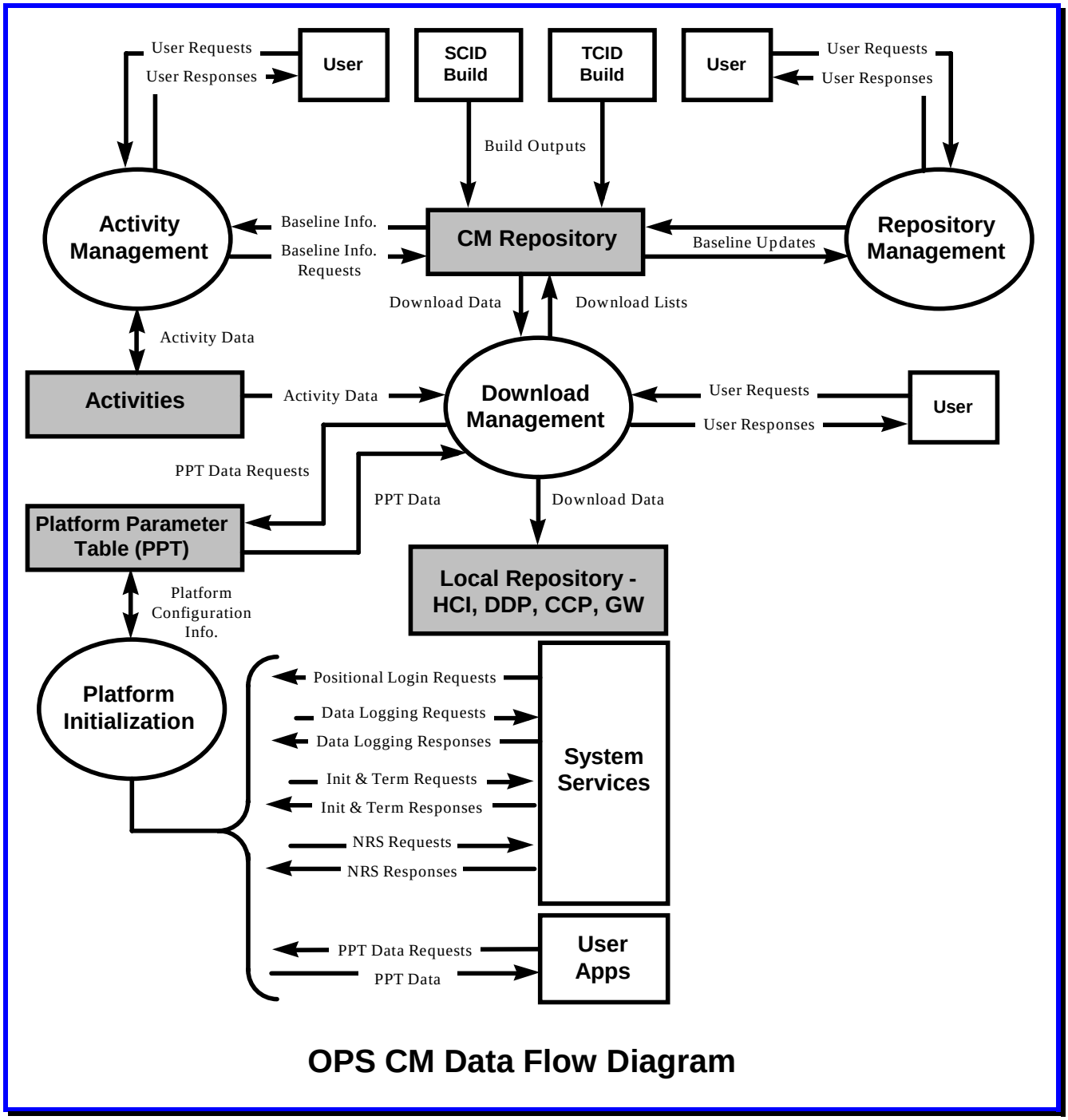
1.2.4 OPS CM Interfaces

OPS CM interfaces with the CLCS user, system and test software baselines, target platforms and System Services software. These interfaces are shown in the following context diagram.



1.2.5 OPS CM Data Flow Diagram

The top level OPS CM data flow is shown in the following data flow diagram.



1.2.6 OPS CM Hardware Diagram

The SCID and TCID Builds are distributed from the OPS CM Repository on the Auspex to the OPS CM Servers in each of the development environments. These OPS CM Servers distribute the appropriate software to the CLCS platforms in their respective development environments.